

A new species of the genus *Apseudes*
(Tanaidacea: Apseudidae) Okinawa, southern
Japan

| | |
|---------------------------------|---|
| journal or publication title | Bulletin of the Toyama Science Museum |
| number | 28 |
| page range | 25-31 |
| year | 2005-03-25 |
| URL | http://repo.tsm.toyama.toyama.jp/?action=repository_uri&item_id=825 |

A new species of the genus *Apseudes* (Tanaidacea: Apseudidae) Okinawa, Southern Japan*

Noboru Nunomura

Toyama Science Museum

1-8-31 Nishinakano-machi, Toyama, 939-8084 JAPAN

沖縄島那覇市漫湖干潟から発見されたアプセウデス（タナイス目）の1新種

布村 昇

富山市科学文化センター

939-8084 富山市西中野町1-8-31

沖縄県那覇市国場川河口の漫湖干潟から発見されたタナイス目の1種を新種 *Apseudes nasutus* (和名：ハナダカアプセウデス, 新称)として記載した。本種はインド東部のチルカ湖から知られている *Apseudes chilensis* Chilton, 1924と最も類似するが、(1) 目が存在すること、(2) 胸部が側縁に突出しないこと、(3) 腹部側縁が鋭角に突出しないこと、(4) 第2触角の鞭数が少ないこと、(5) 尾肢の節数が少ないことおよび(6) 第1胸脚（鋏脚）前節及び指節の形態ならびに(7) より大型であることなどで区別される。

また、わが国によく知られているニッポンアプセウデス *Apseudes spectabilis* Studur, 1883とは(1) 頭部の形態、特に中央部の突出部が丸いこと、(2) 目があること、(3) 触角の鞭数が少ないこと、(4) 尾肢の節数が少ないこと、(5) 胸部並びに腹部側縁が目立って突出しないことおよび(6) 特にオスの鋏脚が大きく複雑な構造であることで区別される。なお、本種のホロタイプは富山市科学文化センター (TOYA Cr-13102) で保管される。

Key words : Tanaidacea, Apseudidae, New Species, Taxonomy, *Apseudes nasutus*, Okinawa.

キーワード : タナイス目, アプセウデス亜目, 新種, 分類, 沖縄

During the faunal survey of tidal flat at the lake Manko, mouth of Kokuba River, Naha City, Okinawa Island. Dr. Haruhiko Fujii found some tanaid specimens and they were sent to me for identification. At the closer examination of mine, they proved to represent a new species of the genus *Apseudes*.

Order Tanaidacea

Family Apseudidae

***Apseudes nasutus* n.sp.**

(Figs.1-2)

Material examined: 2♀♀ (1 ♀ holotype, 12.8mm in body length and 1 ♀ paratype, presumably 7.3mm in body length, because its posterior half is broken) and 2♂♂ (1 ♂ allotype, 10.3mm in body length, and 1 ♂ paratype, 7.1mm in body length); Manko Lake, mouth of Kokuba River, Naha-shi, Okinawa Island, southern Japan (26°11.N, 127°41.E); Sep. 29, 2004, coll. Haruhiko Fujii.

*Contributions from the Toyama Science Museum, No.313

Type series is deposited as follows: Holotype (TOYA Cr-13102), allotype (TOYA Cr-13103) and a paratype (TOYA Cr-13104) at the Toyama Science Museum; a paratype (NSMT Cr 16239) at the National Science Museum, Tokyo.

Description: Female: Body (Fig. 1A) 4.6 times as long as wide excluding uropods and both antennae. Color white in alcohol. Cephalon with a rounded and protruded antero-medial projection. Eyes mediocre; each with 8-10 ommatidia. Pereon (excluding fused first segment) occupies 51% of the body. Pleon perfectly divided into 5-segments, and occupy 12% of total length. Telson rectangular, and 1.2 times as long as wide. Uropod long, occupying 28% of the body.

Antennule (Fig. 1B) composed of 4-segmented peduncle, 15-segmented outer flagellum and 11-segmented inner flagellum. Antenna (Fig. 1C) composed of 2-segmented peduncle, and 10-segmented outer flagellum and single-segmented inner flagellum. Right mandible (Fig. 1D) stout, having 3-segmented papal segment 1, with 12-13 setae around the margin; second segment 1.5 times longer than the segment 1, with 17 setae; segment 3 almost as long as segment 2, with 4; longer setae on outer margin and 12-13 on lateral and inner area. Pars incisiva 3-toothed; lacinia mobilis with 8-9 slender setae; processus molaris wide; palp 3-segmented, segment 1 with 10-11 setae distal and lateral margins; segment 2 longer than the segment 1, with 8-9 longer setae and 8-10 finer setae on inner margin. Left mandible (Fig. 1E); pars incisiva 4-headed; lacinia mobilis 4-headed.

Maxillula (Fig. 1F): exopod with 10-12 teeth at the tip; endopod with 5 plumose setae at the tip. Palp of maxillula (Fig. 1G) two-segmented: terminal segment with 12-14 long setae on distal area. Maxilla (Fig. 1H) inner lobe with 10-12 long setae and many short setae; inner ramus of outer lobe with 10 setae including 3 branched setae; outer ramus of the same with 19-20 long setae. Maxilliped (Fig. 1I): endite rectangular, with setae on distal margin; 12-15 setae on distal margin and 5 coupling hooks on lateral margin. palp 5-segmented; segment 3 widest, with many setae on inner margin.

Cheliped (Fig. 1J) rather slender: basis and ischium fused into a single segment; merus tapering toward the distal end, with 18-20 setae on inner margin and 10-14 setae on outer distal area; carpus long, about twice as long as merus, with 14-15 setae on inner margin; dactylus with 2 longer setae on inner margin. Pereopod 1 (Fig. 1K) stout and flattened; basis 2.8 times as long as wide, bearing a small 2-segmented exopod in the basal area; ischium relatively short, 0.2 times as long as wide, with a seta on inner area; merus 4/5 as long as basis, with about 15-16 setae and a stout seta on inner margin and 7-8 setae at inner distal area; carpus wide, a little wider than long and 0.7 time as long as merus, with 11-12 setae on inner margin, 6 setae on distal margin and 22-24 setae on outer margin; propodus lanceolate and a little shorter and narrower than as carpus, with 4 setae and 10 setae on inner margin; dactylus slender. Pereopod 2 (Fig. 1L): basis oblong, 2.7 times as long as wide, with 4 relatively long setae at inner distal angle; ischium short, 45% as long as wide and 15% as long as basis, with 5-6 setae at inner distal angle; merus 45% as long as basis, with 8-9 setae on inner margin; carpus 1.5 times longer than merus, with 3 setae on outer distal area and a series of 5 stouter and 7-8 normal setae on inner margin; propodus 3/4 as long as carpus, with 3 longer and 4 setae on inner margin and 5-6 setae on outer margin; dactylus slender. Pereopod 3 (Fig. 1M): basis rectangular, 3.5 times as long as wide; ischium short, 0.2 times as long as basis, with 4 setae on inner margin; merus short, with 10 setae on inner margin; carpus half the length of basis, with 3 relatively long setae on inner margin and 3 setae on distal margin; propodus 0.7 times as long as carpus, with 4-5 setae on inner margin and 16 setae on outer distal margin; dactylus narrow. Pereopod 4 (Fig. 1N): basis 2.5 times as long as wide, with a seta at inner distal area; ischium short, 0.22 times as long as basis, with a seta on inner margin; merus 0.37 times as long as basis, with 5 setae on inner margin; carpus 1.6 times longer than merus, with 11-14 setae on inner margin and 5 setae on distal margin; propodus 0.67 times as long as carpus, with 9-10 setae on inner margin and 22-25 setae on distal margin; dactylus slender. Pereopod 5 (Fig. 1O): basis 2.2 times as long as wide, with a seta on inner margin and 2 setae on inner distal area; ischium 0.25 times as long as basis, with a seta at inner distal area; merus 1.2 times longer than ischium, with 18-20 setae on inner margin; carpus 1.6 times longer than merus, with 15-17 setae on inner margin and a seta at outer distal angle; propodus 0.65 times as long as carpus, with 5-6 setae on inner margin and 5-6 setae on distal margin; dactylus long. Pereopod 6 (Fig. 1P) plentifully setose; basis 2.0 times as long as wide, with a seta at inner distal area and 60-63

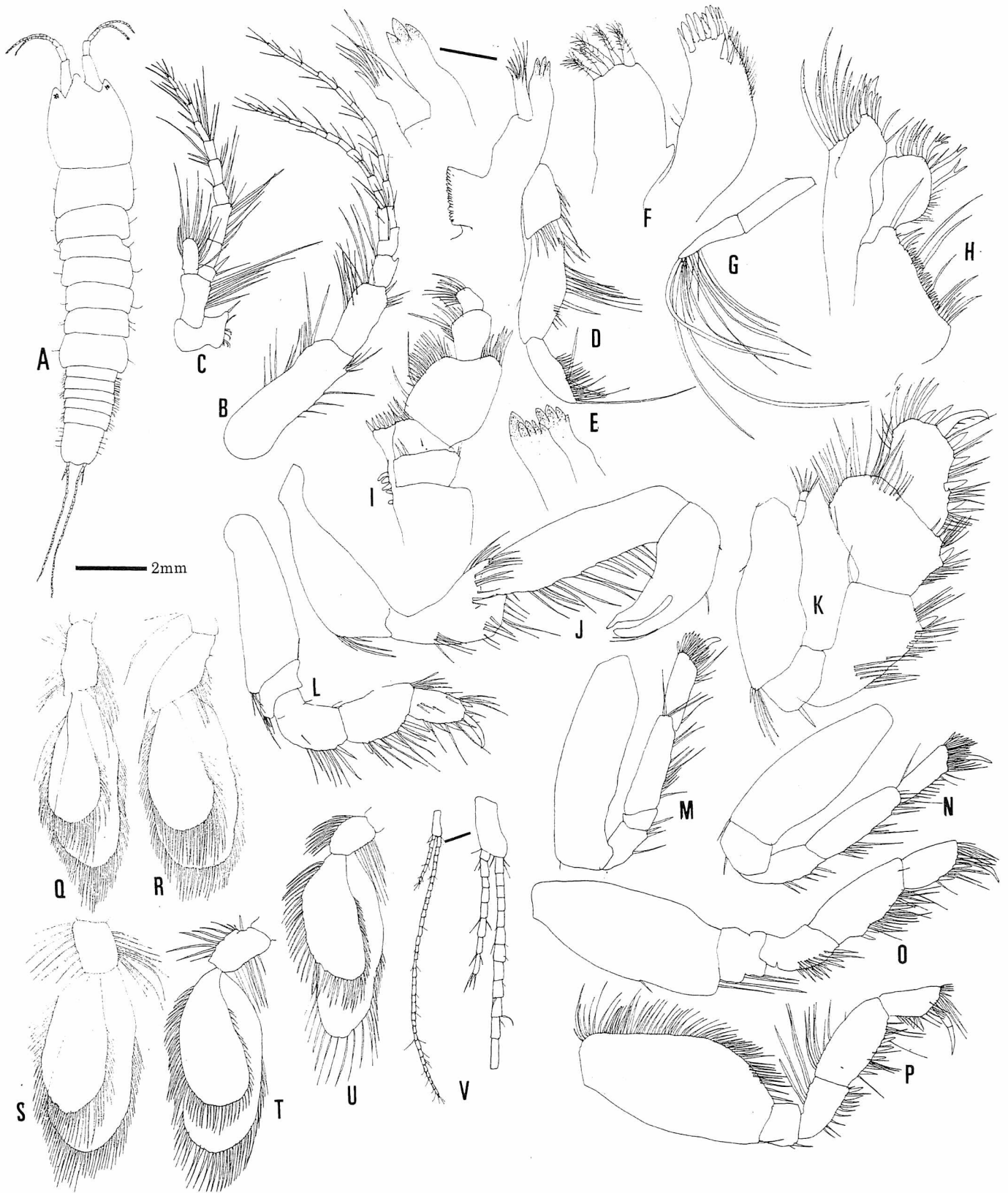


Fig.1 Female of *Apseudes nasutus* n.sp.

A:Dorsal view; B:Antennule; C:Antenna; D:Right mandible; E:Apical area of left mandible; F:Maxillula; G:Palp of the same; H:Maxilla; I:Maxilliped; J:Cheliped; K-P:Pereopods 1-6; Q-U:Pleopods 1-5; V:Uropod (All: Holotype female).

setae on outer margin; ischium short, 0.2 times as long as basis, with a seta on inner distal angle; merus $1/3$ as long as basis, with 11-12 setae on inner margin and 4-5 long setae on outer margin; carpus 45% as long as basis, with 5 stouter setae and 12-13 setae on inner margin, and 7-8 setae on outer margin; propodus $2/3$ as long as carpus, with 16-20 setae on inner margin and about 10 setae on distal margin; dactylus long.

Pleopod 1 (Fig. 1Q): basis rectangular and about twice as long as wide, with 10 long setae on inner margin and 10-12 setae on outer margin; endopod lanceolate, with many setae around the margin; exopod lanceolate, 1.3 times as long as endopod, with many setae around the margin. Pleopod 2 (Fig. 1R): basis pentagonal, 2.1 times longer than wide, with 12-13 setae on inner margin; endopod lanceolate, with many setae around the margin; exopod lanceolate and 1.5 times as long as endopod, with many setae including a strong seta around the margin. Pleopod 3 (Fig. 1S): basis rectangular and about 1.4 times as long as wide, with 9-10 long setae on inner margin and 10-12 setae on outer margin; endopod lanceolate, with many setae around the margin; exopod 1.2 times as long as endopod, with many setae around the margin. Pleopod 4 (Fig. 1T): basis rectangular and about 1.6 times as long as wide, with 5 long setae on both margins; endopod lanceolate, with many setae around the margin; exopod lanceolate and 1.2 times as long as endopod, with many setae around the margin. Pleopod 5 (Fig. 1U): basis rectangular and about 1.4 times as long as wide, with 12 long setae on inner margin and 6 setae on outer margin; endopod lanceolate with many setae around the margin; exopod lanceolate and 1.5 times as long as endopod lanceolate. Uropod (Fig. 1U) long, occupying $1/5$ of the body; endopod and composed of 32-45 segments; exopod composed of 5 segments.

Male: Body (Fig. 2A) 4.4 times as long as wide, excluding uropods and antennae. Color white in alcohol. Cephalon with a protruded round antero-medial projection. Eyes mediocre, each with 8-9 ommatidia. Pereon (excluding fused first segment) occupies 55% of the body. Pleon perfectly divided into 5 segments, and occupy 12% of total length. Posterior margin of pleotelson slightly rounded.

Antennule (Fig. 2B) composed of 4-segmented peduncle, and 13-segmented outer flagellum and 10-segmented inner flagellum. Antenna (Fig. 2C) composed of 2-segmented peduncle, and 11-segmented outer flagellum and 2-segmented inner flagellum. Right mandible (Fig. 2D) stout, having 3-segmented palp; palpal segment 1 with 12-13 setae around the margin; second segment 1.5 times longer than the first, with 17 setae; third segment almost as long as the second, with 4 longer setae on outer margin and 12-13 on lateral and inner area; pars incisiva 3-toothed. Maxillula (Fig. 2E): exopod with 12 teeth at the tip; endopod with 4 plumose seta at the tip. Maxilla (Fig. 2F): inner lobe with 8-10 long setae and many short setae; inner ramus of outer lobe with 16-18 setae including 4-5 serrate ones; outer ramus of outer lobe with more than 30 setae. Maxilliped (Fig. 2G): endite small, with 5-6 segments on distal margin; palp 5-segmented; first segment short, with a seta; second segment 2 triangular with 2 setae on inner margin; segment 3 biggest, with 22-23 setae on inner margin and 4 setae on outer margin; fourth segment much smaller than the third, with 10 setae; fifth segment small, with 7 setae.

Cheliped (Fig. 2H) big and robust: basis and ischium fused into a single segment which bears two-jointed exopod; merus small, with 4 setae on inner margin and 4 setae on the distal part of inner margin; carpus long, 2.3 times as long as merus, with 11 setae on inner margin; immovable chela with 2 larger and 3 smaller setae on inner margin and a group of setae on apical area. Movable chela with a strong tooth on inner margin. Pereopod 1 (Fig. 2I) stout and flattened; basis 1.4 times as long as wide, bearing a small 2-segmented exopod in the basal area; ischium relatively short, 0.2 times as long as basis, with a seta on inner area and a seta at the outer distal area; merus half the length of the basis, with about 14-15 setae on inner margin and 2 setae at outer distal angle; carpus a little wider than long and 0.7 time as long as merus, with 11-12 setae on inner margin, 6 setae on distal margin and 9-10 setae on outer margin; propodus lanceolate and as long as carpus, with 4 stout setae and 10 long setae on inner margin; dactylus normal. Pereopod 2 (Fig. 2J): basis oblong, 2.5 times as long as wide, with 3 relatively long setae at inner distal angle; ischium short, $2/5$ as long as wide and 15% as long as basis, with a seta at inner distal angle; merus 2.5 times as long as ischium, with 7-8 setae on inner margin; carpus 1.5 times longer than merus, with 9-10 long setae on inner margin, 3 setae on outer distal area and a series of 9-10 setae on lateral side in oblique; propodus as long as carpus, with 10-12 setae on inner margin and 8-12 setae on outer margin; dactylus normal. Pereopod 3 (Fig. 2K): basis rectangular,

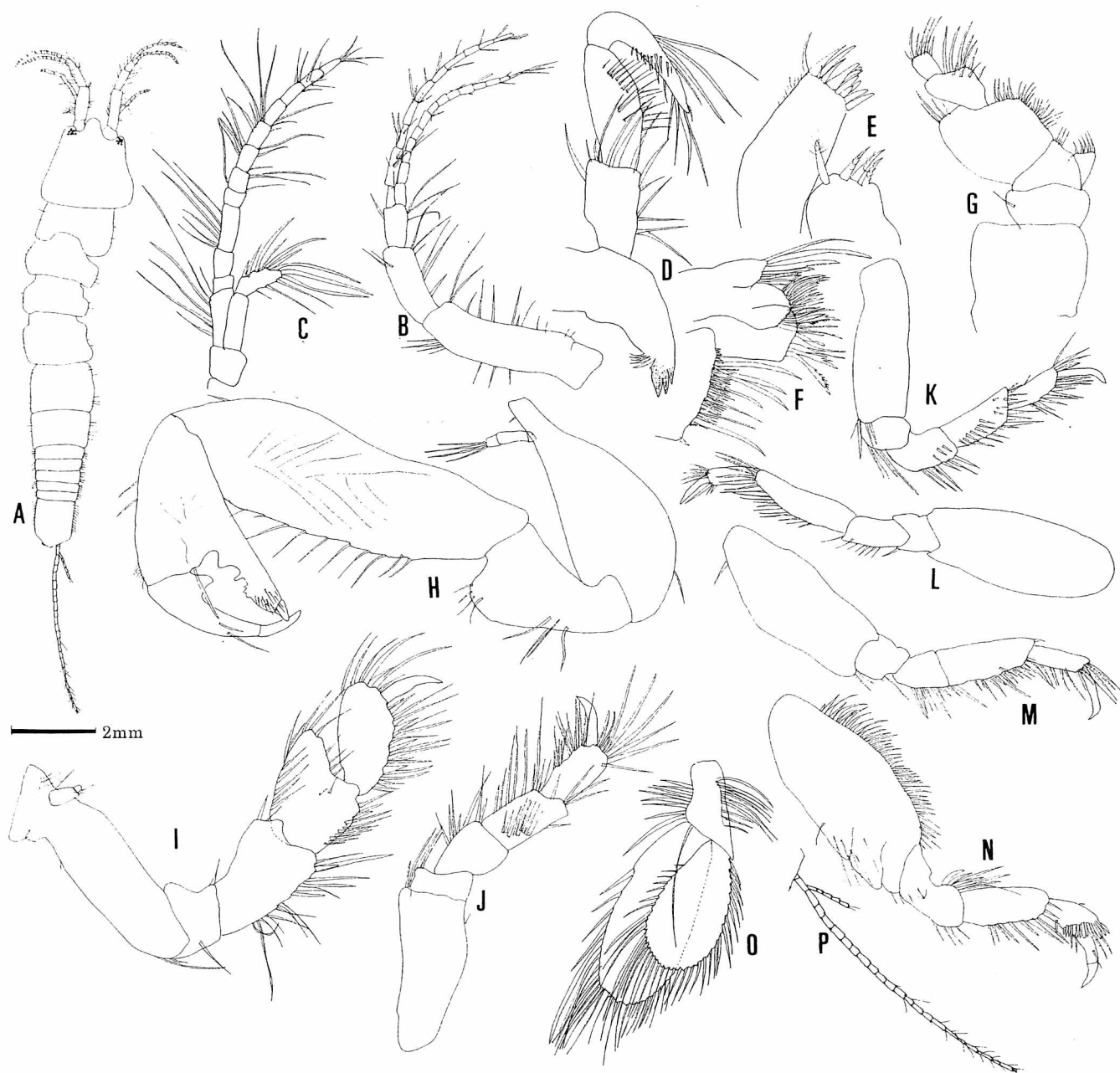


Fig.2 Male of *Apseudes nasutus* n.sp.

A: Dorsal view; B: Antennule; C: Antenna; D: Right mandible; E: Maxillula; F: Maxilla; G: Maxilliped; H: Cheliped; I-N: Pereopods 1-6; O: Pleopod 5; P: Uropod (All: Allotype male).

2.1 times as long as wide, with 4 setae on inner distal area; ischium short, 0.2 times as long as basis, with 4 setae on inner distal angle; merus twice as long as ischium, with 7-8 setae on inner margin; carpus a little longer than merus, with 7-8 relatively long setae on inner margin and 10 setae on lateral areas and 4-5 setae on distal margin; propodus 0.7 times as long as carpus, with 10 setae on inner margin and 4-5 setae on outer distal angle; dactylus long. Pereopod 4 (Fig. 2L): basis 2.5 times as long as wide; ischium short, 0.18 times as long as basis, with a seta at inner distal angle; merus 0.33 times as long as basis, with 7 setae on inner margin; carpus 1.7 times longer than merus, with 13 setae on inner margin and 5 setae on distal margin; propodus 0.45 times as long as carpus, with 7-8 setae on distal margin; dactylus slender. Pereopod 5 (Fig. 2M): basis 2.2 times as long as wide, with a seta on basal are and 2-setae on inner distal area; ischium 0.25 times as long as basis, with a seta at inner distal area; merus 1.2 times longer than carpus, with 8 setae on inner margin; carpus 1.6 times longer than merus, with 15-17 setae on inner margin and a seta

at outer distal angle; propodus 0.65 times as long as carpus, with 5-6 setae on inner margin and 5-6 setae on distal margin; dactylus slender. Pereopod 6 (Fig. 2N) plentifully setose: basis 2.0 times as long as wide, with 6 long setae on inner margin and 40-46 setae on outer margin; ischium short; merus 1/3 as long as basis, with 4 setae on inner margin and 7-8 setae on inner margin; carpus a little longer than merus, with 9-10 relatively long setae on inner margin; propodus 3/5 as long as carpus, with 15-17 setae on distal margin; dactylus long.

Pleopods (Fig. 2O) bi-ramous; both lanceolate. Uropod (Fig. 2P) long, occupying of the body: endopod composed of 5 segments: exopod composed of 22-25 segments.

Etymology: *nasutus*=having a large nose in Latin. The present species has a round and protruded antero-medial projection.

Remarks: Hitherto 67 species have been known from all over the world (Sieg, 1983) but only a species in Japan. The present new species is most closely allied to *Apseudes chilensis* Chilton, 1924 reported from Chilka Lake, eastern India, but the former separated from the latter in the following features: (1) presence of eyes, (2) shape of lateral part of pereonal somite, (3) less acutely protruded pleonal somites, (4) less numerous segments of antenna, (5) less numerous segments of uropods, (6) shape of cheliped and (7) bigger body size.

The present new species is separated from the already known species in Japan *Apseudes spectabilis* Studur, 1883 in the following features: (1) rounded anterior medial projection, (2) presence of eyes, (3) less numerous segments of uropods, (4) less numerous segments of both antennae, (5) protruded lateral projections of pereonal and pleonal somites and (6) stronger cheliped in male.

Acknowledgment

I would like to express my sincere gratitude to Dr. Haruhiko Fujii, who collected these interesting specimens and Prof. Keiji Wada of the Nara Women's University for his kindness in offering the opportunity to examine the interesting material.

References

- Băcescu, M., 1980. *Apseudes bermudeus*, n. sp. from caves around Bermude Islands. *Acta Adriatica* 21: 401-407.
- Bamber, R.N., 1997. Peracarid crustaceans from Cape d'Aguilar and Hong Kong, II: Tanaidacea: Apseudomorpha. In *The Marine Flora and Fauna of Hong Kong and Southern China IV.*, 87-102 (B. Morton ed.) Proceedings of the Eighth International Marine Biological Workshop: The Marine Flora and Fauna of Hong Kong and Southern China, Hong Kong, 2-20 April 1995. Hong Kong: Hong Kong University Press.
- Bamber, R.N., 1998. Tanaidaceans (Crustacea, Peracarida) from the southeast of the South China Sea. *Asian Marine Biology* 15: 169-197.
- Bamber, R.N., 2000. Additions to the Apseudomorph tanaidaceans (Crustacea: Peracarida) of Hong Kong. In *The Marine Flora and Fauna of Hong Kong and Southern China IV.* (B. Morton ed.) Proceedings of the Tenth International Marine Biological Workshop: The Marine Flora and Fauna of Hong Kong and Southern China, Hong Kong, 2-26 April 1998. Hong Kong: Hong Kong University Press, 37-52.
- Bamber, R.N., T. Ariyananda, & E.I.L. Silva., 1996. A new genus and species of apseudomorph tanaidacean from Sri Lanka. *Asian Marine Biology* 13: 133-140.
- Bamber, R.N., & G. Bird, 1997. Peracarid crustaceans from Cape d'Aguilar and Hong Kong, III. Tanaidacea: Tanaidomorpha. Pages 103-142. *The Marine Flora and Fauna of Hong Kong and Southern China IV.* (In Morton, B. ed.), Proceedings of the Eighth International Marine Biological Workshop, 2-20 April 1995. Hong Kong: Hong Kong University Press.
- Bamber, R.N., G.J. Bird, & S. Angsupanich, 2003. Tanaidaceans (Crustacea: Peracarida) from Thailand: new records and new species. *Asian Marine Biology* 18: 35-69.
- Bamber, R.N. & M. Shearer, 2003. A reinterpretation of the taxonomy and zoogeography of *Pakistanapseudes* and *Swireapseudes* (Crustacea: Tanaidacea): Hong Kong taxa in the world context. Pages 167-194 In *Perspectives on Marine Environment Change in Hong Kong and Southern China, 1977-2001.* (B. Morton ed.) Proceedings of an

- International Workshop Reunion Conference, Hong Kong 21-26 October, 2001. Hong Kong: Hong Kong University Press.
- Chilton, C., 1924. Fauna of the Chilka Lake. Tanaidacea and Isopoda. *Memoirs of the Indian Museum* 12: 875-985.
- Lang, K., 1970. Taxonomische und phylogenetische Untersuchungen über die Tanaidaceen 4: Aufteilung der Apseudiden in vier Familien nebst Aufstellung von zwei Gattungen und einer Art der neuen Familie Leiopidae. *Arkiv för Zoologi*, Serie 2, 22(16): 595-626.
- Nunomura, N., 1985. Marine tanaid and isopod crustaceans off Kagawa Prefecture, Seto Inland Sea, Japan. *Special publication of the Mukaishima Marine Biological Station* 101-112.
- Sieg, J., 1983. Tanaidacea. In.: H.-E. Gruner et L.B. Holthuis, *Crustaceorum Catalogus*. Hague, 6: 1-552.
- Shiino, S.M., 1951. On two new species of the family Apseudidae found at Seto. *Report of Faculty of Fisheries, Prefectural University of Mie* 1: 11-25.
- Shiino, S.M., 1952. A new genus and two new species of the Order Tanaidacea found at Seto. *Publications of the Seto Marine Biological Laboratory* 2(2): 14-28.
- Shiino, S.M., 1963. Tanaidacea collected by Naga Expedition in the Bay of Nha-Trang, South Viet-Nam. *Report of the Faculty of Fisheries, Prefectural University of Mie* 4(3): 437-507.
- Shiino, S.M., 1965. Tanaidacea from the Bismarck Archipelago. *Videnskabelige Meddelelser fra Dansk naturhistorisk Forening i Kjøbenhavn* 128: 177-203.
- Shiino, S.M., 1970. Paratanaidae collected in Chile Bay, Greenwich Island by the XXII Chilean Antarctic Expedition, with an *Apseudes* from Porvenir Point, Tierra del Fuego Island. *INACH (Instituto Antártico Chileno). Ser. Cient.* 1: 77-122.
- Shiino, S.M., 1978 (published 1979). Tanaidacea collected by French Scientists on board the survey ship "Marion-Dufresne" in the regions around the Kerguelen Islands and other subantarctic islands in 1972, '74, '75, '76. *Science Report of Shima Marineland* 5: 1-122.
- Studer, T., 1883. Isopoden, gesammelt während der Reise S.M.S. Gazelle um die Erde, 1874-76. *Abh. Kgl. Akad. Wiss.* 1-28.